

THE CHARACTERISTICS, KNOWLEDGE, BELIEFS AND PRACTICES OF PARENT/GUARDIANS OF CHILDREN WITH ASTHMA IN ACCRA, GHANA

*BAMENLA QUARM-GOKA, ¹I.F.A. HESSE AND J.O. OLIVER-COMMEY
Departments of Child Health and ¹Medicine & Therapeutic, University of Ghana Medical School,
P O Box 4236, Accra, Ghana.

SUMMARY

All over the world the morbidity and mortality from asthma is increasing. Though the reason for this trend is not clear, most studies have shown that the failure of patients, parents, carers and health personnel to recognise the severity of asthma attacks, delay in seeking medical help and the subsequent delay in initiating treatment are major contributing factors. Education of parents of children with asthma is an essential step to reduce this trend in asthma. In order to formulate an appropriate and locally relevant health education programme in Ghana, a prospective study was conducted to determine the characteristics, knowledge, attitudes, beliefs and practices of parents/guardians of children with asthma presenting to the Department of Child Health, Korle Bu Teaching Hospital (KBTH), Accra, Ghana. Person to person interview using a pre-tested questionnaire was administered to parents/guardians of children with asthma. A total of 69 patients were recruited. Sixty-one (97.1%) fathers and 66(98.6%) mothers had attained at least primary level occupations. Questions assessing the respondents' knowledge about the cause and natural history of asthma were correctly answered by 56.1% to 91.2% of the respondents. The level of education of the parents/guardians did not influence the number of correct answers. Breathlessness was the commonest symptom (95.5%) attributed to asthma while cough was regarded as the commonest first sign (68.3%) of exacerbation of asthma. Seventy-seven percent of parents/guardians would give a bronchodilator and/or consult a doctor when their child develops breathlessness. Only 21.5% and 7.7% would give a bronchodilator or consult a doctor, respectively for cough. It was concluded that parents/guardians of children with asthma were quite knowledgeable about asthma but their recognition of acute asthma was poor and they did

not take appropriate action at the onset of exacerbations. On the basis of these results recommendations were made to improve the health education of parents/guardians.

Keywords: Asthma, knowledge, attitudes and practices, childhood asthma.

INTRODUCTION

Asthma, the commonest chronic disease of children the world over, has a prevalence rate of 4%-20% in the developed world^{1,2}. In Africa, a prevalence rate of between 2.4% to 7.9% has been reported^{3,4}, while a rate of 3.1% has been reported for school children in the Ashanti Region⁵ of Ghana. The morbidity and mortality of the disease is on the increase⁶ despite a better understanding of its pathogenesis and the availability of effective treatment modalities.

Though the reason for this trend in morbidity and mortality is not clear, most studies have shown that the failure of patients, parents, carers and health personnel to recognise the severity of asthma attacks, delay in seeking medical help and the subsequent delay in initiating treatment are major contributing factors². As in other illnesses, the health seeking behaviour of patients and parents/guardians is influenced by their beliefs and experience with the local healthcare system. In Ghana, as in most developing countries, and increasingly in developed countries also, a significant number of patients first seek for health care from traditional healers, herbal clinics, spiritual/religious houses and other alternative medical caregivers before attending at an orthodox health facility because of their beliefs. Thus, these beliefs and consequent attitudes and practices may contribute to the increased morbidity and mortality of asthma.

* Author for correspondence

Among the many strategies to reduce the morbidity and mortality of childhood asthma, is the education of patients, their relatives and their carers. Indeed, this is crucial to the successful management of asthma^{7,8}. They should be educated about the disease in order to ensure their appreciation of the importance of their participation in the total management of the disease. The assessment of parents/guardians' knowledge, beliefs and practices concerning childhood asthma is an essential step in the formulation of an appropriate and locally relevant health education programme⁸. This study was therefore conducted in order to identify issues which should be covered when educating parents/guardians of children seen with asthma at the Department of Child Health, Korle Bu Teaching Hospital (KBTH), Accra.

The objectives of the study were to determine the educational and occupational backgrounds of the parents and to determine the knowledge, beliefs and practices of the parents/guardians with respect to asthma.

METHODS

Study Site

This study was carried out at the Department of Child Health, KBTH, a tertiary referral hospital in Ghana. It is located in the capital city, Accra and serves the Greater Accra Region for acute cases and most of the southern sector of Ghana for other referrals. The Child Health Department sees all patients 12 years old and below in the emergency wards and the outpatient's department (OPD).

Study Design

This was a descriptive study of children aged 2-12 years with asthma seen at the above department.

Recruitment

Consecutive patients attending the Emergency Ward and Out-patients Department (OPD) of the Children's Block of KBTH from February 1996 to February 1997 with symptoms of recurrent cough, dyspnoea, wheeze or with the admitting diagnosis of asthma, bronchitis, wheeze, pneumonia or respiratory distress were screened for eligibility for recruitment by interviewing the accompanying parent/guardian and examining their case notes to see if they met the inclusion criteria below.

Inclusion criteria

Patients who met the following criteria for the definition of asthma used in this study^{9,10,11} were recruited:

- History of ≥ 3 attacks of recurrent wheeze, cough and/or dyspnoea resolving spontaneously or on bronchodilator therapy, and/or
- Recurrent/chronic nocturnal cough (≥ 4 weeks) responsive to bronchodilator or anti-inflammatory therapy.

Exclusion criteria

Patients with symptoms determined to be due to cardiovascular disease, pulmonary infections, structural respiratory tract abnormality and those aged <2 years were excluded from the study.

Data collection

A questionnaire designed for the study was pre-tested at Mamprobi Polyclinic and necessary modifications were made. One of the authors administered the questionnaire by personal interview with one parent/guardian of each patient after informed consent was obtained. All information was treated with utmost confidentiality. The questions sought information on the characteristics, knowledge, beliefs and practice of the respondent with regards to the child's asthma. Information about the education and occupation of both parents was also obtained from the respondent. As part of a larger study, the main limitation in administering the questionnaire was the length of time required (30-40minutes), which made it difficult to sustain the full attention of some respondents after a while. The fact that the questionnaire was administered by one author meant that there was opportunity to ensure that respondents understood the questions put to them, thereby increasing the likelihood of accurate answers being given. Approval by the Ethics Committee of the University of Ghana Medical School was obtained prior to the initiation of the study.

Data analysis

Dbase IV software was used for data entry. Data was analysed using the statistical package for social sciences (SSPS) for computation of frequencies and Epi-Info for selected cross tabulations (chi-square). A p value of <0.05 was considered significant. Frequencies computed included the relation of the respondent to the patient, educational and occupational status of parents, responses to questions assessing knowledge/beliefs about asthma and actions taken when their wards had symptoms of cough and breathlessness. Cross tabulations included the mother's educational status against her ability to answer at least 4 out of 5 questions assessing knowledge about asthma correctly; the duration for which patient had had symptoms of asthma against the ability of the re-

spondent to answer at least 4 out of 5 questions assessing knowledge about asthma correctly; action respondent would take against type of asthma symptom.

RESULTS

General

Sixty-nine patients were recruited. Of these 65 (94.2%) patients were diagnosed as having asthma based on ≥ 3 episodes of wheeze and dyspnoea resolving either spontaneously or on bronchodilator therapy, while it was diagnosed in 4 (5.5%) based on recurrent/chronic cough which responded to bronchodilator and/or steroid therapy. Forty-five (65.2%) of the respondents were mothers, 14 (20.3%) were female guardians and 10(14.5%) were fathers.

The patients consisted of 37 (53.6%) males and 32 (46.4%) females. Their mean age (SD) was 5.1 (2.5) years. The median duration of asthma symptoms was 3 years with a range of < 1 year to 8 years.

spondent. With regards to the occupation of parents, 55(79.7%) fathers and 48 (69.6%) mothers had upper or middle level occupations. The occupation of 3 fathers and 2 mothers were unknown.

Knowledge of parents/guardians

Sixty-eight (98.6%) respondents were aware of asthma as a disease entity. Sixty-five (94.2%) of the respondents had heard about asthma before their child/ward was diagnosed as having asthma. Sixty-three (91.3%) first became aware because they knew someone else who had asthma and 5 became aware through the media or a health professional.

Table 1 shows the percentage of respondents giving answers to the 5 questions assessing their knowledge of asthma. The respondents were most knowledgeable about the role of orthodox medications as controlling rather than curing asthma. Their concept of control was generally that of aborting an acute attack only to await the occurrence of the next one. They were least knowledgeable about the cause of asthma.

Table 1 Answers to 5 questions assessing knowledge of parent/guardian

Questions	n	Answers	% of n respondents
Cause of asthma	66	Heredity, environment or allergy	56.1
		Do not know	40.9
		Spiritual/other	3.0
Natural history	68	May or may not resolve	76.4
		Do not know	13.2
		Continues into adulthood	5.9
		Resolves	4.5
Is asthma contagious?	69	No	76.8
		Do not know	15.9
		Yes	7.3
Does asthma kill?	69	Yes	82.6
		No	8.7
		Do not know	8.7
Role of orthodox medications	68	Control disease	91.2
		Cure disease	4.4
		Do not know	4.4

n=number of people who responded to question

Educational level and occupation of parents

Sixty-one (97.1%) fathers and 66(98.6%) mothers had attained at least primary education. Fifty-seven (90.5%) fathers and 59(88.1%) mothers had attained higher than primary level education. Two (2.9%) fathers and 1 (1.4%) mother had not had any formal education. The educational level of 6 fathers and 2 mothers were unknown to the re-

There was an association between the ability to answer at least 4 out of 5 questions assessing knowledge about asthma correctly and the duration for which the patient had had asthma when the respondent was the mother but not when it was the father or a guardian. A significantly larger proportion of mothers whose children had had symptoms for 5 to 8 years were able to do this than those

whose children had had symptoms for <5 years (8 out of 8 and 22 out of 35 mothers respectively, $p=0.033$). There was no such association for respondents who were fathers or guardians ($p=0.71$ and 0.49 respectively).

Mothers whose children had had symptoms for less than 5 years were more likely to answer at least 4 questions correctly if they had attained higher than primary education than if they had only had primary education (22 out of 32 and 0 out of 3 mothers respectively, $p=0.044$). For children who had symptoms for 5 years or more, all mothers (3 primary and 5 higher than primary education) were able to answer at least 4 questions correctly. When the cross tabulation was done for all mothers as a group irrespective of the duration of their child's symptoms, there was no association between the level of education and the ability to answer correctly ($p=0.224$). Twenty-three out of 60 (38.3%) respondents said they had had formal health education on asthma from health personnel.

Symptoms attributed to asthma and the first sign of exacerbation

Symptoms mentioned are shown in Table 2. Breathlessness was the commonest symptom attributed to asthma. The symptom that was most commonly regarded as the first sign of exacerbation of asthma was cough.

First line reaction to symptoms

Table 3 shows the initial reaction of parents/guardians to the symptoms of cough and breathlessness of their wards. The other measures taken included restriction of patient's activity, keeping patient warm, steam inhalation, giving honey, antibiotic, antihistamine, paracetamol or increased oral fluids. Overall, only 38.5% (25/65) parents/guardians would give a bronchodilator or consult a doctor as an early measure in response to cough compared to 76.6% (49/64) who would do so in response to breathlessness ($p<0.0001$).

Other therapies considered important

Herbal medicines were the most common (79.7%) alternative therapy mentioned. However, only 20 out of the 55 (36.4%) who indicated herbal medicine as an alternative had tried this option for their wards. Other therapies were honey and lime (20.3%), avoidance of trigger factors (7.2%) and prayer (1.5%).

DISCUSSION

This study looked at the educational and occupational characteristics, the knowledge, beliefs and practices of 69 parents/guardians of 69 children with asthma attending KBTH. The recruitment of that number of patients over a period of one year in a single tertiary facility in Accra confirms that asthma is not a rare disease in Accra^{12,13}. The ma-

Table 2 Symptoms attributed to asthma and symptoms regarded as 1st sign of asthma

Symptom	Regarded as symptom of asthma*		Regarded as first sign of exacerbation	
	No	%	No	%
Breathlessness	64/67	95.5	4/63	6.4
Cough	22/67	32.8	43/63	68.3
Wheeze	10/67	14.9	2/63	3.2
Rhinitis/sore throat	3/67	4.5	14/63	22.2
Others	7/67	10.4	-	-

*Some respondents gave >1 symptom

Table 3 parents/guardians' first line reaction to symptoms of asthma exacerbation

Action taken	Cough		Breathlessness		P
	No	%	No.	%	
Give cough mixture	19/65	29.2	1/64	1.6	<0.0001
Give bronchodilator	14/65	21.5	13/64	20.3	0.86
Consult doctor	4/65	7.7	24/64	27.5	0.002
Combination*	6/65	9.2	12/64	18.8	0.12
Other	21.65	32.3	14/64	21.9	0.18

*Combination = 2 or 3 of the following at the same time: cough mixture, bronchodilator, and consult doctor

majority (85.5%) of patients were brought to hospital by female caregivers in the person of their mother or female relation in keeping with the recognised responsibility of women as the main childcare givers in Ghana¹⁴.

The study found that only 2.9% and 1.4% of fathers and mothers, respectively, had not had any formal education. These percentages were much lower than those for the population of the Greater Accra Region from which the patients came, of 9.8% and 19.4% for males and females respectively¹⁵, indicating that children of relatively better educated parents were coming in with asthma. In keeping with this, the parents belonged to the upper and middle-income brackets. This contrasts with the finding that the majority of children seen at this facility are from low-income families, mostly with infectious diseases (unpublished data). A similar finding was reported for asthma in children in the Ashanti Region of Ghana in whom there was a higher prevalence among the urban rich than the urban poor⁵. Thus in Ghana, asthma seems to affect mainly children from the higher socio-economic group. It is to be noted that the relationship between asthma and socio-economic status varies between countries. In some, asthma is commoner in the higher¹⁶ or lower¹⁷ socio-economic groups, while others find no such relationship^{18,19}.

That asthma is not an unknown disease in Ghana is reflected by the fact that several ethnic groups have a name for it in their local dialects. Indeed, some of the local names of the disease are very descriptive of the symptoms of asthma. The level of awareness of the disease asthma in this study was extremely high (98.6%) and it would be interesting to determine the level of awareness in other parts of the country and also among people who do not have a family member who has asthma. Interestingly, 94% of respondents had heard about the disease asthma before their children/wards were diagnosed and for the majority of these it was because they knew someone else with asthma. It is likely that a substantial proportion of these other people were actually relatives who had asthma since in a related unpublished study, 36.2% of the children had a sibling or parent who had asthma.

The overall knowledge about asthma of the respondents was very high. As would be expected, mothers whose children had had symptoms for longer were more knowledgeable probably due to their experience. This however was not the case with fathers and guardians and may be due to the

small number of those respondents. It was interesting to note that though as a group, the mothers' knowledge did not appear to be influenced by their level of education, when they were stratified according to the duration of their children's symptoms, mothers of children who had had symptoms for less than 5 years performed better if they had higher than primary level education. They probably had made the effort to find out more about the illness than their less well educated counterparts. The results also suggest that the influence of experience may have offset the advantage of higher formal education among mothers whose children had had symptoms for 5 or more years and it would be interesting to study this with a larger study population since there were only 8 patients in this category.

Almost all the respondents (91%) knew that asthma medications control rather than cure asthma. This compares favourably with the study reported by Moosa and Henley²⁰ who found that over 90% of respondents were aware that orthodox medicine controls rather than cures asthma. It is important for parents to have realistic expectations of asthma management to prevent disappointment and frustrations. This is important as many herbal practitioners are promoting unsubstantiated asthma cure treatments in Ghana. The concept of many of the respondents about control was that of obtaining relief from acute symptoms, only to await the occurrence of the next acute attack. There is therefore the need to educate parents/guardians to know that control means the prevention or the reduction of acute symptoms to the barest minimum so that a person who has asthma is able to live as normal a life as any one else.

A majority of the respondents (79.7%) believed that herbal medicine had a role in the treatment of asthma, though only 36.4% of those who responded to the question about whether they had actually used it admitted to doing so. It is likely that this is an under-representation since many respondents may have felt reluctant to admit to a medical doctor that they had tried this. There are many local herbal remedies on the market in Ghana and generally their use has been based on empirical rather than objective scientific evidence. For example, 20.3% of respondents considered a combination of lime and honey important in the management of asthma while this combination has not been shown to have any beneficial effect in asthma. Reliance on this combination in an acute attack would only delay the onset of effective treatment of a potentially fatal attack and should

be discouraged. Local researchers have shown promising results from some plants which have a bronchodilatory effect²¹. Since the current medications for asthma prophylaxis are quite expensive, local researchers should be encouraged to look not only for plants with bronchodilatory effect but also for plants which could modify the inflammatory processes underlying asthma at a lower cost.

Respondents were least knowledgeable about the cause of asthma, which is not surprising since even medical science has a lot of unanswered questions in this regard. Factors currently accepted as contributing to the aetiology of asthma such as heredity, allergy and environmental factors were mentioned by 56%, which is good, while as many as 41% said had no idea about aetiology. Since some alternate practitioners capitalise on the fact that people will usually seek help from those who offer explanations for their disease symptoms, it is important that orthodox health practitioners communicate the current medical knowledge about aetiology to their clients in simple terms and explain how that knowledge influences the approach to management. This will help to gain and retain their confidence.

It is gratifying to note that most of the respondents knew that asthma was not contagious. This is important in Ghana, as people tend to shun others with contagious illness and this would make the care of asthma sufferers more difficult. That asthma can be fatal was well recognised by most of the respondents. However, a worrying 17% of respondents were not aware of this. Ignorance about potential fatality from asthma could contribute to complacency about acute symptoms, delay in obtaining medical help and result in unnecessary deaths.

Breathlessness was the commonest symptom attributed to asthma, probably due its dramatic nature. Although only 33% respondents mentioned cough as a symptom of asthma, as many as 68% said they regarded cough as the first indicator of an exacerbation of asthma. We find that in practice most people regarded cough as initiating asthma rather than being a symptom of asthma. The importance of cough as an early feature of an exacerbation of asthma is therefore not fully realised by caregivers. The findings that about 30% of respondents said that they would give only cough mixture for cough supports this. This is further emphasised by the fact that significantly more caregivers took appropriate steps of either giving a bronchodilators or consulting a doctor for breathlessness than for

cough ($p < 0.0001$). It is therefore important to educate parents and doctors to recognise persistent coughing in an asthmatic as an early indication of an exacerbation which should be taken seriously and prompt the initiation of bronchodilators drugs and other supportive measures early at home to curtail the exacerbation.

In summary, this study found that children attending KBTH, Accra, with asthma are mainly from relatively well educated and well to do families. Although only about 38% of respondents admitted to having been educated about asthma by a health worker, the level of knowledge about some of the aspect of asthma was quite high. However, their recognition of and initial reaction to early symptoms of exacerbation of asthma were not satisfactory. The results show that they knew something about asthma but not enough to effectively help with the management of their children's illness. Their knowledge and practice ought to be improved through appropriate health education. They need to be equipped with a written "action plan" detailing what to do or give in the event of an acute attack, as well as specifying features that would indicate the need for seeking hospital treatment. The concept of control as the prevention of acute attacks through the appropriate use of medications and environmental measures to achieve a normal lifestyle should be emphasised. The parents/guardians of children with asthma seen in KBTH have the requisite educational background to be educated to achieve the best asthma management for their children/wards and yet only a minority had been educated by a health-worker. Health-workers must make the effort not to neglect this vital aspect of the care of patients with asthma. The establishment of asthma clinics and training of "asthma nurses" would help to achieve this.

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